

Section of the History of Medicine.

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Some Plague Tractates (Fourteenth and Fifteenth Centuries).

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INTRODUCTION.

THE two centuries which followed the Black Death of 1348 saw a vast output of writings on the subject of the pest. This literature took the form mainly of short tractates, a few folios only in length, giving directions to the physician or to the populace as to their conduct in time of plague, and advice for the treatment of the stricken. Most of the tractates contain also a certain amount of theoretical material on the nature and origin of the outbreaks. The classics of medicine, works of Greek and Arabian origin, were held to be inadequate for the emergency, and the tractate literature represents the current medical opinion of the time and holds up a mirror to the practice of the late Middle Ages and early Renaissance.

Nor was the period entirely stationary as regards plague theory and practice. In the course of these 200 years, the doctrine of miasma shakes off its temporary association with astrology, while phlebotomy yields to other prophylactic and therapeutic measures designed to purify the "circumambient air" without and the "humors" within the body. The gradual process of development culminates in the magnificent Renaissance work, the "De Contagionibus" of Fracastor (1546),¹ which formed the staple of the doctrine of infection until quite modern times.

The conclusions here sketched are based on the study of some 100 MS. tracts,² supplemented by printed material, and especially by the valuable collection of tractates gathered by Professor Sudhoff.³ It

¹ Hieronymus Fracastorius, "De Contagionibus," Venice, 1546.

² This paper is based on the British Museum Plague MSS. Some others have been used for purposes of comparison. The French version of John of Burgundy's treatise, from the Bibliothèque Nationale, has been chosen for publication in the Appendix on account of its early date and intrinsic interest, Latin versions of this treatise having already been published.

³ Sudhoff, "Pestschriften aus den ersten 150 Jahren nach der Epidemie des schwarzen Todes, 1348," *Arch. f. Gesch. der Med.*, Leipzig, 1909-16, ii-ix (in progress). Cf. also E. Wickersheimer, "Les Maladies Epidémiques ou Contagieuses (Peste, Lépre, Syphilis) et la Faculté de Médecine de Paris de 1399 à 1511," *Bull. de la Soc. Franç. d'Hist. de la Med.*, Par., 1914, xiii, p. 21; G. Sticker, "Abhandlungen aus der Seuchengeschichte und Seuchenlehre," Giessen, 1908; C. Creighton, "History of Epidemics in Great Britain," Camb., 1891-94; A. Chéreau, "Les Ordonnances Faictes et Publiées à son de trompe par les carrefours de ceste Ville de Paris pour éviter le dangier de Peste, 1531, précédées d'une étude sur les épidémies parisiennes," Par., 1873; and J. F. C. Hecker, "Die grossen Volkskrankheiten des Mittelalters," Berl., 1865 (and earlier editions), English translation by B. G. Babington, 3rd ed., London, 1859. The more popular early printed leaflets on the plague are reproduced by Paul Heitz and W. L. Schreiber, "Pestblätter des XV Jahrhunderts," Strasburg, 1901 (for the most part single sheets). Many of these printed sheets have figures. Artistic and literary aspects of plague visitation are dealt with by Raymond Crawford, "Plague and Pestilence," Oxford, 1914.

is proposed to examine in detail one typical fourteenth century treatise, and to note the divergencies from it, both as regards theory and practice, set forth in some other fourteenth and fifteenth century MSS.

(I) THE TRACTATE OF JOHN OF BURGUNDY (SIR JOHN MANDEVILLE),
1365.

The plague tractate selected as a type for more extended consideration bears the date 1365, and is by John of Burgundy, or John à la Barbe, who describes himself as citizen of Liège and professor of the art of medicine. He has a special interest for us, since the research of the last fifty years has fairly established his authorship of the original version of the "Travels of Sir John Mandeville."¹ It is told in the "Travels" that Sir John met in Egypt an extraordinarily learned and venerable physician, whom he calls Johannes ad Barbam. It was this bearded John, he assures us, who, by a curious coincidence, saved his life many years afterwards in Liège, when being taken extremely ill with arthritic gout, the knight had sent with all speed for the very best and most skilled advice obtainable! The distinguished physician, he adds, then suggested that Sir John should write down the story of his wanderings.²

Here, then, we catch a glimpse of the old Liège physician as he would fain have appeared to his contemporaries. The plague treatise is written in discursive and patchwork style, not unworthy of the author of the compilation known as the "Travels of Sir John Mandeville." It is not only one of the earliest of the plague tractates, but is also the parent of a whole host of variants and descendants, and provides a key to much of the literature.

¹ Cf. S. Bormans, "Catalogue de la Librairie de la Collégiale St. Paul à Liège," in *Le Bibliophile Belge*, Brussels, 1866, i, p. 236, and "Chronique et Geste de Jean des Preis dit d'Outremeuse," Brussels, 1887, i, Introduction, pp. cxxxii *et seq.*; E. W. B. Nicholson, *Academy*, 1884, xxv, p. 261; E. W. B. Nicholson and Sir Henry Yule, "Encyclopædia Britannica," 1893, article "Mandeville"; and, for the fullest presentation of the subject, G. F. Warner, "The Boke of John Mandevill, being the Travels of Sir John Mandeville, Knight, 1322-1356, a hitherto unpublished English version from the unique copy (Egerton MS., 1,982) in the British Museum, together with the French text," published by the Roxburgh Club, Westminster, 1889, with Introduction and notes. The subject is further discussed by Professor Hamelius in the *Trans. Bibliograph. Soc.*, Lond., 1916, xiii, p. 193.

² This tale occurs in the early printed Latin version of the "Travels" in 1480. (The British Museum copy bears the press-mark G. 6,700.) F. Hénaux, in the *Bulletin de l'Institut Archéologique Liégeois*, Liège, 1860, iv, p. 159, quotes a similar passage from a French MS. (No. 360 of the Liège University Public Library, fo. 118), and from "the Latin version of Martins de Alost, of the year 1491."

The contents of Johannes ad Barbam's tractate may be set forth thus:—

Title	...	[fo. 97 recto to line 3] (omitted in many MSS.).
(1) Astrological introduction		[fo. 97 recto, line 4, to fo. 98 recto, line 2].
(2) Personal introduction	...	[fo. 98 recto, line 2, to fo. 98 recto, line 28].
(3) Prophylaxis:—		
(a) General regimen	...	[fo. 98 recto, line 24 to line 29].
(b) Diet	...	[fo. 98 recto, line 29 to line 33, and fo. 98 verso, line 17, to fo. 99 recto, line 4].
(c) Disinfection	...	[fo. 98 recto, line 33, to fo. 98 verso, line 11, and fo. 99 recto, line 6 to line 9].
(d) Drugs	...	[fo. 98 verso, line 11 to line 16, and fo. 99 recto, line 9 to line 18].
(e) Phlebotomy	...	[fo. 99 recto, line 4 to line 6].
(4) Pathological theory	...	[fo. 99 recto, line 19, to fo. 99 verso, line 5, and in passages on fo. 99 verso, between line 5 and line 34].
(5) Therapeusis:—		
(a) Phlebotomy	...	[fo. 99 verso, line 5 to line 34].
(b) Drugs	...	[fo. 99 verso, line 34, to fo. 100 recto, line 10, and fo. 100 recto, line 17, to fo. 100 verso, line 14].
(c) Diet	...	[fo. 100 recto, line 10 to line 17].
(6) Astrological epilogue	...	[fo. 100 verso, line 15, to fo. 101 recto, line 7].
(7) Postscript:—		
(a) Phlebotomy	...	[fo. 101 recto, line 8, to fo. 101 recto, line 33, and fo. 101 verso, line 13, to fo. 101 verso, line 28].
(b) Drugs	...	[fo. 101 recto, line 33, to fo. 101 verso, line 18].
(c) Need for "modern" treatise	...	[fo. 101 verso, line 28, to fo. 102 recto, line 28].
(8) Epilogue:—		
(a) Author's motive	...	[fo. 102 recto, line 29, to fo. 102 verso, line 4].
(b) <i>Explicit</i>	...	[fo. 102 verso, line 5 to line 7].

The notes in brackets in the table refer to the text printed in the Appendix. This is a French version written in 1371, and therefore only six years after the composition of the work. The MS. is in the Bibliothèque Nationale at Paris (Français, nouvelles acquisitions, 4,516). It is a beautiful specimen of palaeography, and forms one volume with the "Travels of Sir John Mandeville," which precede it in the same handwriting. We may leave open the question whether the French or Latin rendering gives us the original form of the

tractate. The use of such words in the Latin version as "guerras" for wars and "rixas" for brawls suggests at least a French-speaking author. The occasional equation of French *comme* with Latin *cum* and many other turns of phrase point, on the other hand, to Latin as the original language of the tractate itself.¹

The compilatory character of this tractate of John of Burgundy is sufficiently proved by the amount of overlapping and repetition in the subject-matter. Furthermore, even in the 1371 French version there are a number of "items" which interrupt the general narrative. Such "items" may or may not have been in the original form, as issued at Liège by bearded John in 1365, but they vary greatly in the later copies, in which, as in all literature of this type, they tend to accumulate so as to conceal the original basis of the composition.

(1) The *astrological introduction* deals with "remote causes" of the pestilence. In the words of an attractive fifteenth century English translation: "Alle thynges here in erthe as wele thelementes as þinges sprungen and compownyd of thelement(is) ben governed and ledde by tho bodyes that ben above in the Sperys or cercles of the firmament."² The atmosphere itself is regarded, according to the Aristotelian doctrine of the elements, as a simple substance, and therefore incorruptible. But the evil influences from on high give rise to corrupt humors or vapours, and these, mingling with the atmosphere, originate epidemics. Nor will the full effect of the evil emanations be at once known, for the "vestigia" will lurk in many places, not in the outer world alone, but also in the humors of the patients themselves.

Our author here attempts a statement of the endemic character of plague in the intervals between the great epidemics:—

"Not that the aire was corupte in his substance, for hit is a symple þing or an unmedled body, but hit corrupteth by encheson of the euyl vapo(u)rs medled togydors. Wherfor epidimia or pestilence in many costes folowith, and yit in many places his traces and steppes apparen as hit shew(i)t(h) wele. for many aine is infect and namely suche as ben replete and stuffed w(i)t(h) he

¹ This manuscript has been transcribed by Dr. Singer. Miss M. K. Pope, of Somerville College, has very kindly examined the French text, and has come to the conclusion that it is most probably a translation from the Latin.

² Sloane, 3,449, fo. 5 verso. The sentence continues: "As Mosehallak seith in his boke of interpretac(i)ons ca(pitul)o de accio, the bodies abouen(n) ben(n) founden(n) to bryng in to alle the bodies þat ben(n) undre their cercles essente or beyng, nature or kynde, substant(n)ce, vegetac(i)on(n) or thryvyng, lyvyn or deyng as not long sithen(n) of influence or imp(re)ission(n) of the heuenly or high bodies bothe causatly and effectuall in effect."

humo(r)s that ben mystempled with euyl qualite. But yit coruptyng of the
ane is not alone cause of moreyne but also haboundance of humors corrupt
in hem þat dien. As Galien saith in his boke of ffevers¹ the body suffreth no
corupc(i)on, but if the matier of the body be prompt or redy þerto and in
a mane(r) subiect or obedient to the corruptible cause ffor right as þe fyre
may not brenne but in matere þat is combustible or able to brenne, right so
nouther pestilence ne pestilencial aire noyeth not but if it fynde mater redy
and obeying to corupe(i)on.”²

Similarly the nature of the disease caused by corrupt air will in each case depend on the humoral complexion of the patient, and we are warned of the dire results of employing learned masters of medicine excellent on the theoretical side but little expert in practice. "Quomodo curares si causam ignorares," says Hippocrates, followed by Avicenna and "Commentator" (i.e., Averroes).

In most of the MSS.³ this is emphasized by a reference to a certain "master of Colon,"⁴ who had sent to Liége a recipe which might indeed serve to prevent the spread of the poison until a proper remedy were available but would be of no use as a *treatment* against the plague. — *to know the exalted combination*

(2) *Personal Introduction.*—Having shown the exalted combination of learning and experience needed for successful treatment, John modestly proceeds to explain that he therefore has himself written a series of works on the plague, and that this, the latest flower of his wisdom, is especially designed for the plain man, that each may be his own “physicus, curator preservator ac rector.”

(3) *Prophylaxis*: (a) *General Regimen*.—The treatise proper, after setting forth the name and title of its author, opens with instructions how to avoid the plague. A simple, temperate life is recommended. Luxury and, above all, baths are forbidden, lest the pores of the skin

¹ Galen, "De Febribus," lib. i, caps. ii to vi (C. G. Kühn, "Galeni Opera," Greek and Latin, vii, p. 273). Cf. Constantinus Africanus, "De Communibus Medico Cognitu locis necessariis" Basel, Henricus Petrus, 1541, lib. v, cap. xi.

2 Silene 3449 fo. 5 verso.

³ French: Paris, Bibliothèque Nationale, "Nouvelles acquisitions françaises," MS. 4,516, fo. 97 verso. Latin: British Museum MS., Royal 12 G. IV (VI), fo. 158 recto, column b; Sloane, 134 (VI), fo. 32 recto; Bodleian MS., Ashmole, 1,443 (VI), fo. 352 recto; St. John's College, Oxford, MS. 172 (XI), fo. 259 verso [Latin, practically identical with British Museum MS., Royal 12 G. IV (VI)]; in the Erfurt MS., "Amploiania," Q. 192, fo. 146 recto to fo. 148 verso, the passage is transferred to almost the end of the tract; see G. Guttmann "Die Pestchrift des Jean à la Barbe (1370)," "Inaugural-Dissertation zur Doktor Würde," Berlin, 1903. English: British Museum, Sloane, 2,172, fo. 241 verso; Bodleian MS., Ashmole, 1,443 (IV), fo. 378 verso.

⁴ The University of Cologne was not founded until 1888. The "master" was therefore
an honorary official.

be opened and an entry thus afforded to pestilential air. The belief in the importance of the rôle played by the pores of the skin may have reached John of Burgundy through Constantine,¹ while the prohibition against baths in time of pestilence occurs in the brief verse "Regimen Tempore Pestis" in the Salernitan "Flos Medicinae."²

(b) *Diet*.—We are warned against fruit, except the acid varieties. A light diet is advised. Aromatic wine is good, but we must shun honey and all food cooked with honey. In hot weather a "frigid" dietary must be followed, modified according to the humoral complexion of the individual. The diet must be temperate, and we should drink rather than eat in plague time. White wine is good, and we must partake of much vinegar.

(c) *Disinfection*.—Our author turns next to rules for the practice of "disinfection," as we may call it. In cold or misty weather he bids us shut the windows and purify the air within by means of fires of juniper branches, so that the heat and smoke may pervade the room. Or better still, a powder, for which the recipe is given, should be scattered on live coals as a deodorizer, and the resulting smoke inhaled through mouth and nostrils.

The doctrine of miasma implied by this procedure has had as long a history as any in medicine. It may be traced back through Hippocrates to the magic and folk medicine of primitive peoples, and it has come through the Dark and Middle Ages right down to our own time, when

¹ Cf. *Constantinus Africanus*, "De Communibus Medico Cognitu locis necessariis," lib. vi, cap. vi.

² "Flos Medicinae Scholae Salerni," pt. viii, cap. ix, "Collectio Salernitana ossia Documenti Inediti e Trattati di Medicina, appartenenti alla Scuola Medica Salernitana, raccolti ed illustrati da G. E. T. Henschel, C. Daremberg e S. De Renzi," edited by S. De Renzi, five vols. Naples 1852-59 v. p. 77.

“ Devita coitum, infirmos, balnea, fructus;
Sit cibus autem tuus bonus, et vinum tibi potus;
Illud sit vinum puro quoque flumine mixtum;
Adde ciboque tuo, cum prandes, semper acetum;
Ex aloë myrrhaque, croco fit pilula firma;
Mane laves vultum dentes manusque per acetum
Sed caveas oculos ne tangas, nam nocet illis,
Ascatum panem perarcatum propter odorem
In manibus serves, sed si fuerint tibi glauca
Sanguine te minusas, infectum teque noscas.
Sic pestem fugies, hanc formam si bene serves:
Nux, ficus et ruta, muscatum quatuor icta
Legumine sumpta depellunt quaeque venena.”

In truth, little was added to this advice until the nineteenth century taught the salutary fear of the rat.

old wives still imagine that the sick-room is rendered more healthy by the burning of disinfectant ribbons. The conception probably reached mediaeval Europe through Constantine.¹ The allusions in the classical writings to the use of fire to extinguish plague can hardly have been available to John of Burgundy. Thucydides, however, whose works were unknown in the Middle Ages,² is quoted on this subject by Galen,³ and in one of the anonymous tracts of the great Salernitan Codex at Breslau fires are recommended in houses in damp or marshy positions,⁴ while the "Flos Medicinae" contains a specific warning against bad air in the neighbourhood of drains.⁵

(d) *Drugs.*—But disinfection of the air was not enough. The pores of the skin were regarded by most mediaeval writers as the main channel of entry of the pestilential poison. It was therefore necessary to take internal disinfectants to destroy any virulent vapours that had penetrated into the body and were now, perhaps, circulating in the humours. For this purpose aromatic remedies should be taken internally, and a large number of these are suggested.

It is a good thing to carry in the hand a "pomum ambre"—that is, a mass of aromatic drugs made up with resin or amber. All these measures are commonplaces of mediaeval plague literature, and must have proved the source of enormous profits to the apothecaries.

In addition to these aromatic preparations most of the plague tractates, including that of John of Burgundy, recommend a number of homely herbal remedies. Many of the herbs named in the tractates may be found in the recipes of the Salernitan MSS., though it may well be doubted if the plants of the southern Italian region could be identified by the natives of northern and western countries. Doubtless these recipes embody a herbal folklore handed down from remote antiquity. Among the most persistent ingredients are diptaine, scabious, tormentil,

¹ Constantine Africanus, "De Communibus Medico Cognitu locis necessariis," lib. v, cap. x, &c.; cf. also "Flos Medicinae Scholae Salerni," pt. ii, cap. ii, § 46, in De Renzi, loc. cit., v, p. 28.

² The first translation of Thucydides into Latin was the work of Laurentius Valla (1407-57) and was not completed until 1452. The *editio princeps* of Thucydides is as late as 1502 (Venice).

³ Galen, "Ad Pisonem de Theriaca," cap. xvi (Kühn, loc. cit., xiv, p. 282).

⁴ "Compendium Salernitanum," "De Adventu Medici ad Aegrotum," De Renzi, loc. cit., ii, p. 79 (and i, p. 202).

⁵ "Flos Medicinae Scholae Salerni," pars i, cap. iii, De Renzi, loc. cit., v, p. 2. Cf. also Rhazes, "Liber Divisionum," cap. clviii, "De Febre ex Pestilentia"; Avenzoar, "Theizir," lib. iii, tract 3, cap. i, "De Epidimis qui provenit ex corruptione aeris."

pimpernel, roses and violets.¹ Vinegar is also in universal favour both as a potion and a disinfectant.²

(e) *Phlebotomy.*—We are to beware of a flying, pricking sensation in the blood, a warning which recalls those vague symptoms by which the modern vendor of patent medicines seeks to persuade all mankind of its urgent need of his wares.³ The victim of this terrifying "pricking in the blood" is recommended to have immediate recourse to phlebotomy, to take various medicaments, and to sprinkle the floor of his room two or three times a day with a lotion for which the recipe is given.⁴ The details of phlebotomy are discussed in the section on Pathological Theory, and are again taken up in the section on Therapeusis and in the Postscript.

(4) *Pathological Theory.*—If, owing to neglect of regimen, an attack of the plague does indeed supervene, remedies (which, of course, need skilled administration) must be applied forthwith. For the pestilence overcomes the system with disastrous speed and becomes "confirmed" within twenty-four hours.

A pathological explanation of this process follows. The evil vapours having entered the pores are conveyed by the blood to one of the three principal members—the heart, the liver, or the brain. Now it must be known that each of these principal members has an emunctory or place at which it seeks to expel its noxious superfluities. Thus, when the heart is attacked, we may be sure that the poison will fly to the emunctory of the heart, which is in the arm-pit. But if it find no outlet there, it is driven to seek the liver, which again sends it on to its own emunctory at the groin. If thwarted there, the poison will next seek the brain, whence it will be driven either under the ears or to the throat. If still no relief is brought by the blood-letter, the case has indeed become urgent, for the poison, having taken twelve hours to perform its circulation and sought an issue in vain, will now within the

¹ Cf. "Flos Medicinae," De Renzi, loc. cit., v, pp. 30, 31, 32. Neither diptaine nor pimpernel, however, seem to have been known to the Salernitans.

² "Flos Medicinae Scholae Salerni," "Regimen Tempore Pestis," see note 2, p. 165; Rhazes, "Almansor," tract 1, cap. i, and "Liber Divisionum," cap. clviii; Avenzoar, "Theizir," lib. iii, tract 3, cap. i; Avicenna, "Canon," lib. iv, fin. 1, tract 4, cap. iv; Averraces, "Colligit," lib. vii, cap. xxx.

³ But cf. Rhazes, "Almansor," tract 1, cap. i, for this phrase.

⁴ Cf. Galen, "Methodus Medendi," lib. ix, cap. xiv (Kühn, loc. cit., ix, p. 649); Rhazes, "Almansor," tract 1, cap. i, and "Liber Divisionum," cap. clviii; Avenzoar, "Theizir," lib. iii, tract 3, cap. i; Avicenna, "Canon," lib. iv, fin. 1, tract 4, cap. iv; De Renzi, loc. cit., ii, p. 741.

next twelve hours indubitably "fasten itself," throwing the patient into an ague and forming an apostume at or near one of the emunctories; and then indeed the evil will be hard to eradicate. The pathological doctrine contained in this section is derived directly from certain Arabian writings.¹

(5) *Therapeusis*: (a) *Phlebotomy*.—The best means of dealing with the situation, however, is by blood-letting. To each principal member and its emuncitory there corresponds a superficial vein, the flow of blood from which will ease the part to which it is related. The vein to be opened will therefore depend upon the stage at which the patient passes into the physician's hands. This belief in the relationship of the superficial veins to the different organs of the body has itself given rise to a mass of tracts, many of them illustrated by figures and diagrams, which vary greatly among themselves and show how the teaching concerning blood-letting was in a constant state of flux.

John follows the doctrine that the blood of one side of the body is only in imperfect relation with that of the other side. It is therefore essential to confine our blood-letting activities to the diseased side. If phlebotomy be performed on the wrong side the gravest consequences may ensue, for not only will the patient lose good blood, but its place will be taken by degraded blood from the opposite side, and so the whole system will be corrupted.² Other authors take precisely the contrary view and advise blood-letting always from the sound side.

Where the emuncitory of the brain appears affected, John recommends scarification with pitch between the shoulders as an alternative to blood-letting. No doubt this treatment rendered doubly desirable the final injunction to administer "comforts" or strengthening compounds for the heart.

(b) and (c) *Drugs and Diet*.—A short dietary follows, and then more recipes, including that of the infallible powder "pulvis imperialis" or "bethazaar." The word "bethazaar," John explains, is of Arabian origin, and means "a morte liberans." But few apothecaries, we are assured, have the necessary ingredients for this wonderful powder which delivers from death. Its composition, indeed, is unknown to most physicians, but at a certain apothecary in Liége its necessary components may be found. These ingredients prove to be very ordinary

¹ Cf. Rhazes, "Almansor," tract 1, cap. i; and Averroes, "Colligit," lib. vii, caps. xxix and xxx.

² Cf. "Compendium Magistri Salerni," De Renzi, loc. cit., iii, p. 60.

herbs, but their names are sufficiently impressive and obscure to have served to disturb the peace of the ordinary layman. The avowed purpose of this passage is to push the wares of a particular apothecary at Liége. Perhaps on that account, although he gives the names of the herbs which enter into this marvellous life-saving preparation, our author refrains from revealing their relative proportions. The dosage of the host of herbal remedies that went to make up a mediaeval prescription was a point to which the greatest importance was attached.

(6) *Astrological Epilogue*.—A warning is given that the present epidemic of 1365 is to be attributed, not to the recent conjunction of Jove and Saturn, but to the "vestigia" from the conjunction of twenty years ago. Yet the recent meteorological disaster may be relied upon to bring trouble enough: disease on beast as well as on man, war, convulsions of dynasties and among the sects, destruction of many powerful men and of Saracens, famine, storms, and floods.

(7) *Postscript*.—This part of the work covers ground somewhat similar to that already traversed in the previous sections of the MS. It deals, however, with drugs and phlebotomy from a somewhat different angle, and gives a whole new series of motives for the composition of the tractate. The previous section ends with *Amen*, and the Postscript, complete in itself, differs from the remainder of the tractate not only in style but also in the exclusion of astrology and the inclusion of the names of a large number of Greek and Arabian authors. It therefore appears not improbable that the whole section has been lifted bodily from the work of some still earlier author. This conclusion, however, can only be decided by further research.

The list of medical writers contained in the Postscript is an interesting indication of the medical writers known to a Fleming of the fourteenth century. The list consists of Hippocrates, Galen, Dioscorides, Rhazes, Haly Abbas, Rufus, "Damascenus," Hesben (? Geber), Mesue, Copho, Constantine, Serapion, Avicenna, Averroes, and Algazel.¹ He quotes also Aristotle ("philosophus") "de cœlo et mundo." Damascenus is, perhaps, Mesue Senior. The Postscript, after having set forth a regimen of phlebotomy and drugs, passes to

¹ The list varies in different versions. Royal 12 G. IV (VI), fo. 158 recto to fo. 160 recto; Sloane, 2,320 (VI), fo. 18 verso to fo. 16 recto; Sloane, 3,566 (VI), fo. 63 verso to fo. 87 recto, and other versions give, besides Hippocrates, Galen, Dioscorides, Rhazes, Damascenus, Geber, Mesue, Copho, Constantine, Serapion, Avicenna, Algazel, Averroes, *et alii*. The Paris version, Sloane, 134 (VI), fo. 31 recto to fo. 38 verso, and Sloane, 2,322, fo. 93 verso to fo. 99 recto, all add Haly (called "hasp" in Sloane, 134) and Rufus. Other versions have shorter lists.

the motives of bearded John in writing his tractate. He assures his readers that long experience has convinced him both of the ignorance of the plague and the inefficacy of the remedies of these ancient physicians, and of the relative efficiency of the moderns, and especially of his own remedies.

Explicit.—Thus he has been moved by charity to the composition of the tractate "Non precio sed precibus"—"Not for a price, but for your prayers have I indited this work; and let him whose health returns, pray for me."

The treatise of bearded John attained a wide popularity, especially in this country. There are four Latin and two English copies in the British Museum,¹ and several more in Oxford and Cambridge.² In Lille there is, or was, a Latin version.³ Two copies are known in Germany,⁴ one in Brussels, though of a comparatively late date,⁵ and Hebrew versions in Paris, Leyden, and Petrograd.⁶ The writer has found none in Mazzatinti's great collection of catalogues,⁷ so that they must be at least rare in the Italian peninsula, but one of the British Museum copies⁸ purports to be the original work of the faculty of

¹ Latin: Royal, 12b, IV (VI), fo. 158 recto to fo. 160 recto; Sloane, 134 (VI), fo. 31 recto to fo. 38 recto; Sloane, 2,322, fo. 98 verso to fo. 99 recto; Sloane, 3,124 (XIII), fo. 51 verso to fo. 61 verso. In Sloane 75 (X), fo. 189 recto contains a transcript of a fragment of the Latin treatise. See also note 2, p. 171. English: Sloane, 3,449, fo. 5 verso to fo. 12 verso, and Sloane, 2,172, fo. 241 recto to fo. 244 verso (imperfect).

² Oxford—Latin: Bodleian MS., Ashmole, 1,443 (VI), pp. 351 to 375; St. John's College, Oxford, 172 (XI), fo. 259 recto to fo. 264 recto; English: Bodleian MS., Ashmole, 1,443 (VII), pp. 376-393. Cambridge—Latin: Trinity College, Cambridge, 1,144 [O.2, 40], fo. 110 verso (fragment). See also note 2, p. 171. English: Trinity College, Cambridge, 1,404 [O.8, 29], pt. 1 (II), fo. 25 recto.

³ Lille, Bibliothèque Municipale, MS. 863, fo. 132 to fo. 140. This MS. is known to the writer only by the catalogue of the library.

⁴ Erfurt, "Amploniana," Q.192, fo. 146 recto to fo. 148 verso; see G. Guttmann, who prints this text, loc. cit.; Munich: Library of Herr Ludwig Rosenthal MS., fo. 58 verso to fo. 62 recto. See Sudhoff, loc. cit., v, p. 59.

⁵ Brussels, Bibliothèque Royale, II, 1,413, fo. 114 verso to fo. 116 recto (dated 1421), cited by Sudhoff.

⁶ Paris, Bibliothèque Nationale, Nat. Fonds Hébreu, 1,191 (VIII), fo. 141 verso, is unfortunately only a fragment. M. Steinschneider ("Die hebräischen Übersetzungen des Mittelalters," pp. 803 and 804) mentions a Hebrew version of the tractate belonging to Berliner, subsequently acquired by Günzburg, of Petrograd, and also a copy in the Leeuwarden Collection. The latter, in "Leeuwarden MS. 2," has been described by A. Neubauer, in the "Israelitischen Letterbode," Ann. 2, p. 84. This MS. is No. MMDOCLXXVIII (Cod. Heb. 2) in the Catalogue of the University Library of Leyden.

⁷ Mazzatinti, "Inventari dei Manoscritti delle Biblioteche d'Italia," Friuli e Firenze, 1900-15, i to xxiii, in progress.

⁸ Sloane, 3,124, fo. 61 recto to fo. 61 verso.

Bologna. Perhaps that University, the ancient and accredited home of astrology, where a chair of the subject had long been established, could hardly afford to admit the authority of a northern barbarian in the local speciality. The French version in the Bibliothèque Nationale is printed in the Appendix.¹ In addition to the Latin copies already mentioned there are in this country four more from which the Astrological Introduction has been omitted. They are otherwise quite complete, and all bear the author's name.²

The treatise has been often borrowed without acknowledgment, after the mediaeval fashion. The version of the Bologna faculty has already been mentioned. One of the English versions in the British Museum proclaims itself to be the work of a certain John Stamford, of Syssyon.³

Parts of our treatise are skilfully embodied into a Latin "redgement for the pestilence often proved in Oxford and other places," used by "John Stipse usinge surgerye with in the Universytie of Oxforde dwellinge in the paryche of est St. Aldate in fyshe strete at St. Olldys churcheystyle in the yere of our lorde 1472."⁴ Again we recognize whole passages in a fifteenth century MS. giving advice "ad preseruandum hominem contra pestilenciam, a febre pestilentica,"⁵ and in a "trety that is nedfull and necessarie a yinst the pestilens . . . the which trety gadered and sette togidre on englissh a master of diuinite of the ordre of ffrere prechoures Master Thomas Multon of diuerse doct(ir)os of phisik where thei treted of the mater of pestilence."⁶

¹ Paris, Bibliothèque Nationale, Nouv. acq. franç., 4,516, fo. 97 recto to fo. 102 verso (formerly 10,602 and Barrois 185). This version once formed a single MS. with the copy of Mandeville's "Travels," now Nouv. acq. franç., 4,515.

² They open with the sentence that precedes the prophylactic regimen: "I, John of Burgundy, otherwise called la Barbe, citizen of Liège and professor of the art of medicine, intend, having invoked divine help, to epitomize (enucleare) the preservation and treatment of the epidemic." British Museum: Sloane, 2,320 (VI), fo. 13 verso to fo. 16 verso; Sloane, 3,566 (VI), fo. 630 to fo. 870. Gonville and Caius College, Cambridge: 326/725 [C. M. A. 1,099] (XV), fo. 144b. Trinity College, Cambridge, 1,102 [O.1, 77] (V), fo. 59b. The first three MSS. contain several items in common. Our treatise in each MS. is followed by an English version of the tract "in four parts," by John of Bordeaux, and a copy of the epistle "Dilectissima Frater" considered on pp. 174.

³ Sloane, 2,172, fo. 241 recto to fo. 244 recto. The end of this MS. is lacking.

⁴ Sloane, 3,866 (XIII), fo. 90 recto to fo. 92 recto.

⁵ Sloane, 351 (IV), fo. 17 recto to fo. 19 recto.

⁶ Sloane, 3,489 (V), fo. 44 recto to fo. 51 recto. This work appears to have been printed, as the following entry is in J. Tanner, "Bibliotheca Britannico-Hibernica," London, 1748, p. 537: "Moulton, Thomas, Frater Ord. Praedicatorum et S. theologiae doctor. Scriptit speculum salutis, continens pestilentiae remedia, planetarum regimen," &c., cap. cxx. Pr. pr. 'I do you wel to wrytte that thys.' Lond. tempore Henr. VIII. . . . 12mo. Lond. by Eliz. Redman . . . 12mo."

rambling style of the longer treatise, and it is therefore probable that a second hand is responsible for the compilation. As the work was immensely popular in England, where the year 1390—the date of many of these MSS.—saw a serious outbreak of pestilence,¹ we may hazard the guess that the compiler of this tractate was a resident in this country. It must remain in doubt whether *John of Bordeaux* was indeed the author's name or whether the designation is a mere version of the name *John of Burgundy*.

In the British Museum alone there are twenty-two copies of this tract, seventeen being in English, four in Latin, and one in Dutch.² In Oxford there are one Latin and five English versions,³ and in Cambridge one Latin and six English.⁴ A copy from the Kelso Abbey Register has been twice printed in modern times.⁵ Hebrew versions with some extracts from the longer work of *John of Burgundy* are known in Paris and Vienna.⁶

¹ Creighton, loc. cit., i, p. 219.

² British Museum MSS. of *John of Bordeaux*.—English: Sloane, 706 (VIII), fo. 105 recto to fo. 107 verso; Sloane, 963 (IX), fo. 55 recto to fo. 57 verso; Sloane, 965 (VIII), fo. 132 recto to fo. 143 verso; Sloane, 983 (II), fo. 37 verso to fo. 39 verso; Sloane, 1,588, fo. 281 recto to fo. 282 verso, a "Praxis Medica"; Sloane, 1,764 (IV), fo. 5 recto to fo. 8 verso (imperfect); Sloane, 2,187, fo. 86 recto to fo. 88 recto; Sloane, 2,320 (VII), fo. 16 recto to fo. 17 verso; Sloane, 2507, fo. 10 recto to fo. 11 verso (part of "Thesaurus Pauperum"); Sloane, 3,566 (VII), fo. 87 verso to fo. 101 recto; Additional, 14,251, fo. 215 recto and verso; Egerton, 1,624, fo. 216 recto to fo. 217 verso (illustrated); Egerton, 2,433, fo. 41 recto to fo. 42 verso; Egerton, 2,572, fo. 67 recto to fo. 69 recto (poem with thumbnail sketch); Cotton, Caligula A.II (XIII), fo. 35 verso to fo. 66 verso; Harleian, 3,383 (II), fo. 9 recto to fo. 11 recto; Lansdowne, 285, fo. 214 recto and verso. Latin: Royal, 13EX, fo. 24 verso to fo. 25 recto ("Scotocronicon"); Sloane, 7 (XX), fo. 85 verso to fo. 87 recto; Sloane, 405 (VII), fo. 41 verso to fo. 43 recto; Sloane, 433 (V), fo. 47 verso to fo. 51 recto. Royal 13EX has been printed by David Murray, "John de Burdeus or John de Burgundia, otherwise Sir John Mandeville, and the Pestilence," Paisley, 1891 (Alexander Gardner). Dutch: Sloane, 68 (IV), fo. 60 recto to fo. 66 verso.

³ Oxford MSS. of *John of Bordeaux*.—English: Bodleian Library, Ashmole, 1,444, pt. i (VI), pp. 67 to 76; Ashmole, 1,481, pt. ii (I), fo. 21 recto to fo. 23 recto; Ashmole, 1,484, pt. ii (I), fo. 52 recto to fo. 58 verso (imperfect); Rawlinson, A.393 (XVII), fo. 95 recto to 96 recto; Rawlinson, A.429 (XII), fo. 85 verso to fo. 86 verso. Latin: Bodleian Library, Ashmole, 346 (LXXXV), fo. 157 verso to fo. 159 verso.

⁴ Cambridge MSS. of *John of Bordeaux*.—English: University Library MS., Kk. VI, 33 [2,118] (II), fo. 39 recto to fo. 42 recto. Trinity College MS., 905 [R. 14, 32, vac.] (IV), fo. 90 to fo. 92; MS. 1,102 [O.1, 77] (VI), fo. 73 verso; MS. 1,404 [O.8, 29], pt. i, fo. 29 recto; Gonville and Caius College MS., 386/725 [C. M. A. 1,099] (XVI), fo. 148 verso; Jesus College MS., 43 [Q. D. I.] fo. 137 recto. Latin: Corpus Christi College, MS. 171 [F. 9, T. James 62], fo. 393 verso ("Scotocronicon").

⁵ Once by W. B. Turnbull: "Fragmenta Scoto Monastica," Edinburgh, 1842, No. 15, p. xcii, and once in "Liber S. Marie de Calchou Registrum Cartarum Abbacie Tironensis de Kelso," Edinburgh, 1846, ii, p. 448. The latter reproduces the MS. abbreviations unopened. The version in Sloane, 2,320, is printed by Sudhoff, loc. cit.; v, p. 73.

⁶ Paris, Bibliothèque National, Cod. Heb., 1,124, fo. 133 verso to 140 recto, and Vienna, Kon.-Kais. Bibliothek, Cod. Heb., 158.

Only one pirate tract cites "the venerable John of Burgundy" by name. This is a late fifteenth century anonymous MS., and follows pretty closely the work of the Liège physician.¹

(II) THE TRACTATE OF JOHN OF BORDEAUX, 1390.

There is a short treatise usually bearing the name of one "John of Bordeaux, a noble physician," and in many copies dated 1390.² It is divided into four chapters, and embodies the work of *John of Burgundy*, but omits the Astrological Introduction. The first chapter enjoins a moderate regimen, including a careful dietary and complete abstention from the dangerous practice of bathing. The second is concerned with the pathology of the three members and their emunctories. The third emphasizes the need of immediate phlebotomy if the pricking or motion of blood be felt. The patient must fast until the operation of blood-letting has been performed. Should there be an apostume the blood must be let from the side of the body corresponding to the "principal member" affected. Afterwards the heart must be "comforted" with strengthening potions. The fourth chapter provides a brief dietary and recipes.

This treatise follows very closely even the phrases of *John of Burgundy*, and it is difficult to believe that any other source was used by its author. Its orderly arrangement is, however, in contrast to the

¹ Additional, 27,329 (II), fo. 236 verso to fo. 238 verso.

² Three copies of the tract, composed of four chapters, purport to be by *John of Burgoyne*, professor of Liège, and bear the earlier date, 1365. These are in identical English, and are probably all copies from an aberrant prototype. They are British Museum Sloane, 965 (VIII), fo. 132 recto to fo. 143 recto; and Bodleian MS. Ashmole, 1,444, pt. i (VI), fo. 67 to fo. 76, add MS. Ashmole, 1,481, pt. ii (I), fo. 52 recto to fo. 58 verso. Another English version of this short tract is described in the Latin title and *explicit* as the work of *Johannis de Barba alias dictus Johannis de Burdegallia*, while it opens with the usual phrase: "Here begynyth a noble tretyse made of a good phisician John of Burdeux." It occurs between the Latin version without introduction and "Dilectissime Frater" in Sloane, 2,320, Sloane, 3,566, Trinity College, Cambridge, 1,102 (VII) (O.1, 77), and Gonville and Caius College, Cambridge, MS., 336/725 (C. M. A. 1,099); it is also in the Bodleian MS., Rawlinson, A.429 (XII), fo. 85 verso. Jesus College, Cambridge, MS. 43, Q.D.1, similarly opens: "Here begynyth a nobyl tretyse made of a physycyon John of bordeus for medycyn ageyn þe pestylens euylle," and ends "Expl. tract. Joh. le burgall editus contra morbum pestilencie qui est morbus epidimialis anno domini mil. ccxvi nonagesimo." Cambridge University Library, MS. Kk. VI, 33 [2113] (ii), fo. 39 recto, gain gives the author as "John of burgoyn or John wiþ þe berd burges of leodey." Additional MS., 14,251, in the British Museum gives the tract on fo. 215 recto and verso under the name "John of Bardendy." Sloane, 2,507, fo. 10 recto to fo. 11 verso, and Harleian 3,383 (II), fo. 9 recto to fo. 11 recto, give the name as "John of Burgon." The name "Bordeaux," on the other hand, appears as "Burdeux," "Bordewy," "Cordewe," &c.

The tract of John of Bordeaux was often included in other works, as, for instance, in the "Scotoronicon."¹ In some versions and recensions the name of the author is omitted. Illustrations are very rare, but one attractive rendering into English verse is accompanied by a thumbnail sketch to assist the blood-letter.² The work is incorporated in an English "approbate treite for the pestilence studied by the gretteste docturs of phisike amonges thunyversite of Cristin nacyons in the time of Sante Thomas of Caunterbury."³

The simplicity and definiteness of the directions for phlebotomy in this treatise must have given it a special value for the professional blood-letters, the barber-surgeons, often unlearned men; and it is perhaps for their use that the large number of vernacular versions was prepared. One of these is incorporated in the Guild Book of the Barber-Surgeons of York,⁴ and was in use by that body well into the eighteenth century. The volume has an elaborate figure illustrating the instructions for phlebotomy.

(III) THE EPISTLE "DILECTISSIME FRATER," BEFORE 1392.

There exists a further abbreviated version of the tractate of John of Bordeaux. It is anonymous, and is in epistolary form, and opens with a beautiful exhortation: "Beloved Brother, I hear that thou goest in great fear of the plague . . . but surely a little faith would reassure thee, that thou mightest cast off fear and care and sadness and terrifying thoughts and the like, since they are but accidents of the mind and do but offend and consume the spirit. Strive therefore after cheerfulness, for a happy spirit is the very bloom of life, but gloom drieth up the marrow. And next after the counsel of wisdom do thou in all cleanliness and sincerity so dispose thy ways that thou mayest live to-day as though thou wert to die to-morrow. Consider thy years from the days of thy youth in all seriousness, extenuating nought, and whatever is evil and debased therein put from thee. By contrition of heart and true

¹ British Museum, Royal, 13EX, fo. 24 verso to fo. 25 recto, called "The Black Book of Paisley," and Corpus Christi College, Cambridge, MS., 171 [F. 9, T. James 62], fo. 393 verso.

² British Museum, Egerton, 1,624, fo. 216 recto to fo. 217 recto.

³ British Museum, Additional, 5,467, fo. 85 recto to fo. 87 recto. This "Sante Thomas" can hardly be Thomas à Becket, who occupied the See from 1162 to 1170. The reference is probably to Thomas Bourchier, Archbishop of Canterbury from 1456 to 1486. The next Archbishop Thomas was Tenison, who was not appointed until 1694.

⁴ British Museum, Egerton, 2,572, fo. 67 recto to fo. 69 recto; arranged in three chapters.

confession to God give thyself to better things, since assuredly from a healthy mind comes health of body. Death will have no terror for thee if thy life hath been pleasing to the Most High. And when thy soul is washed clear from sin, thus mayest thou preserve thy body from the pestilential malady."

This little Epistle is known only in England, where there are at least sixteen copies.¹ Three of these are incorporated in medical MSS. containing remedies for a number of diseases,² while two other copies³ bear the surprising information: "The following letter was made in Oxford in time of pestilence by the masters and doctors of King Henry IV in the 8th year of his reign [i.e., 1406] and was sent by them to the mayor of London, where it was greatly praised by many physicians, apothecaries and others."⁴

A version in which the preliminary exhortation is abbreviated purports to be addressed by Magister Henry Horn, doctor of medicine to Dominus T. Goldston, monk at Canterbury.⁵

¹ The above is translated from the Latin of the British Museum MS., Arundel, 834 (XVIII), fo. 49 recto to fo. 53 verso. Other Latin versions will be found in the following: British Museum—Sloane, 135 (XIII), fo. 86 recto to fo. 88 recto; Sloane, 213 (XXIV), fo. 161 recto and verso (omits introductory exhortation); Sloane, 393, fo. 67 verso to fo. 69 verso; Sloane, 2,320 (VIII), fo. 17 recto to fo. 18 verso; Sloane, 3,285, fo. 68 recto to fo. 70 recto; Sloane, 3,866 (VIII), fo. 101 verso to fo. 112 verso; Royal, 17 A.XXXI (IV), fo. 112 verso to fo. 115 recto; Harleian, 3,371, fo. 81 recto to fo. 82 recto. Oxford: Bodleian Library, Ashmole, 393, pt. i (VII), fo. 43 recto (claiming to be the work of Henry Horne, exhortation abbreviated); Digby, 29 (XLIV), fo. 294 verso to fo. 295 recto; Digby, 196 (LXIII), fo. 94 verso to fo. 95 recto. Cambridge: University Library, Ll. I, 18 [2,147] I, fo. 63 verso to fo. 64 verso; Gonville and Caius College, 356/725 [C. M. A. 1,099] (XVII), fo. 151 recto to fo. 152 verso; Trinity College, 1,102 [O. 1, 77] (VII), fo. 83 verso to fo. 91 verso; and, finally, Mostyn MS., fo. 221 (mentioned in Fourth Report of Historical MSS. Commission, Appendix, p. 359).

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³ British Museum: Sloane, 3,285, fo. 68 recto to fo. 70; Cambridge University Library MS., Ll. I, 18 (2,147), fo. 63 verso to fo. 64 verso.

⁴ The text of this Epistle from Sloane 2,320 (VIII) fo. 17 recto to fo. 18 verso, is printed by Sudhoff, loc. cit., v, 77. It is practically identical with Sloane, 3,566 (VIII), fo. 101 verso to fo. 112 verso.

⁵ Oxford: Bodleian Library, Ashmole, 393, I (VII), fo. 43 recto. T. Tanner, "Bibliotheca Britannico-Hibernica," Lond., 1748, p. 413, mentions a work, "Contra Pestilentiam," presumably our Epistle, addressed by Henry Horn to Tho. Goldston, Prior of Canterbury. Tanner found a copy among the John Twyne MSS. of Corpus Christi College, Cambridge.

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⁵ Oxford: Bodleian Library, Ashmole, 393, I (VII), fo. 48 recto. T. Tanner, "Bibliotheca Britannico-Hibernica," Lond., 1748, p. 418, mentions a work, "Contra Pestilentiam," presumably our Epistle, addressed by Henry Horn to Tho. Goldston, Prior of Canterbury. Tanner found a copy among the John Twyne MSS. of Corpus Christi College, Cambridge.

(IV) THE LOST TRACTATES OF JOHN OF BURGUNDY, BEFORE 1365.

Before leaving the series of plague tracts associated with the names of John of Burgundy and John of Bordeaux, we must refer to a bibliographical puzzle in the work of the former. At the beginning of what we have called the "Personal Introduction" to his tractate he writes as follows: "I, John of Burgundy, otherwise called à la Barbe, citizen of Liège, and professor in the art of medicine, yet nevertheless the least of all physicians, in time past at the commencement of this pestilence made a treatise of the cause and nature of its corruption and it began *Deus deorum dominus qui simpliciter et absolute omnium entium prima est causa.* Item I made another treatise on the distinction of pestilential from other maladies which commences, *Cum nimium propter instans tempus epidimiale, etc.* And there are many who have copies of these."¹

A careful examination of 187 astrological MSS. selected as among the more promising in the British Museum has so far failed to reveal a treatise exactly corresponding to John of Burgundy's description. As copies of this work were in the possession of many of his contemporaries it is unlikely that it is altogether lost. There is, indeed, an astrological work beginning "*Gloriosus Deus et sublimus creator omnium rerum in prima mundi origine ordinavit in 7 speris 7 planetas.*" Several versions of this work, including an English translation, may be found in the British Museum.² They deal with the heavenly bodies and their qualities, including their humoral influences, and they may possibly represent the missing treatise of John of Burgundy.

The second work which he claims begins with the words *Cum nimium propter instans tempus epidimiale.* These words at once recall the opening of the *Epistle*: "Dilectissime Frater, ut intellexi multum times pro instante epidemia." But how are we to identify that work with John of Burgundy's lost tractate in view of his assurance that the subject of the latter is *de distinctione morborum pestilentialium ab aliis?*

¹ Paris, Bibliothèque Nationale, Nouv. acq. franç., 3,516, fo. 98 recto, lines 2 to 12 (see Appendix); Sloane, 134 (VI), fo. 32 recto, and Sloane, 2,322, fo. 94 recto. Other MSS. give only the words "Deus deorum" as the *incipit* of the first tractate.

² Latin: Royal, 12 B. 25, fo. 254 recto; Harleian, 3,814, pars 1, fo. 91 recto to fo. 95 verso; and Sloane, 636, fo. 71 recto to fo. 73 recto. These all date from the fifteenth century. The English version in the British Museum (Royal, 17c, XV, fo. 10 verso to fo. 15 verso) is incorporated in a sixteenth century MS. A beautiful fourteenth century Latin MS. of the work is at Oxford in the Bodleian Library, where it occupies fo. 119 recto to fo. 120 verso of Digby MS. 147 (XXVII). The versions present considerable variations. In both Sloane 636 (fo. 73 to fo. 74 verso) and Digby 147 (fo. 120 verso to fo. 124 verso) our tract is followed by "De 28 Mansionibus Lune."

The Epistle, as we have seen, deals with no such topic. It can only be suggested that the author, who appears to have deliberately set us these puzzles, has certainly much in common with that arch-practical joker, the author of Sir John Mandeville's "Travels."

(V) OTHER MEDICAL WORKS ATTRIBUTED TO JOHN OF BURGUNDY, JOHN À LA BARBE, JOHN OF BORDEAUX, OR SIR JOHN MANDEVILLE.

A few other medical MSS. bear the names of these authors. Thus at Heidelberg there is a document in which mention is made of "Pulvers in Das Grosse Kunst Buch von Barba,"¹ while both the Heidelberg and the Bodleian libraries have a number of medicinal recipes attributed to Sir John Mandeville himself.² Again, the name of John of Bordeaux is borne on a MS.³ identical with the so-called "Gouernayle of Helthe." The same *Regimen Sanitatis* appears in many MSS. as the "letter from Aristotle to Alexander the Great, *De sanitatis tuenda.*"⁴ This "letter" was translated by Ibn Daud, also called John Hispalensis, or John of Toledo (floruit 1185-53).⁵ He took it out of the shorter or western version of the "Secretum Secretorum," a work that also circulated under the name of an epistle from Aristotle to Alexander the Great.⁶ "The Gouernayle of Helthe" was published in London in 1496 by Caxton, and again by Wynkyn de Worde. Our Liège physician is here again curiously connected with a landmark in English literature, for this little volume is said by Blades to be the first on a medical subject to have been published in England. Probably the attribution of "The Gouernayle of Helthe" to John of Bordeaux is simply due to

¹ Heidelberg University Catalogue, Pal. Germ. 228, fo. 1 to fo. 18.

² Heidelberg University Catalogue: Altdeutsch, 41 (Pal. Germ. 66); Altdeutsch, 80 (Pal. Germ. 138); Altdeutsch, 238 (Pal. Germ. 806). Oxford: Bodleian MSS., Ashmole, 1,441, fo. 25 to fo. 28; Ashmole, 1,479, fo. 320; Ashmole, 1,407, fo. 11 recto to fo. 51 verso.

³ Sloane, 989.

⁴ Among these are—British Museum: Sloane, 59; Sloane, 405, fo. 23 verso; Sloane, 420; Sloane, 783B; Sloane, 2,320, fo. 10 verso; Sloane, 3566, fo. 38; Burney, 350, fo. 360; Burney, 360; Arundel, 123; Arundel, 185; Arundel, 459. Oxford: Bodleian MS., Digby, 228; Exeter College MS., 35 X. Cambridge: Gonville and Caius College, 336/725 (C. M. A., 1,099). The printed versions of this work bear no author's name. See "The Gouernayle of Helthe with a medecyne of ye Stomacke," reprinted from Caxton's edition (circa 1496), with introductory remarks and notes by William Blades, Lond., 1858.

⁵ M. Steinschneider, "Die hebräischen Übersetzungen des Mittelalters," Berl., 1893, p. 981.

⁶ This information was kindly given me by Mr. R. R. Steele.

a confusion of the work with the Latin translation of Galen's "De Regimine Sanitatis," by Giovanni de Borgondio (of Pisa, died 1190).¹

A medical MS.² dating from the sixteenth century contains an English work entitled "Thesaurus Pauperum." The *incipit* runs thus: "Here begins the noble booke of physicke and of Surgery thesaurus pauperum . . . made by a noble phisicion callyde John of Burgon or otherwyse callyd la barbe in the yr of our Lord 1327." This work includes an English version of the plague tractate in four parts of John of Bordeaux, here again called John of Burgon.

(VI) THE "COMPENDIUM DE EPYDIMIA" OF 1348.

One plague treatise has come down to us, probably dating from the very year 1348. This is the "Compendium de Epydimia" of the Paris Faculty of the Colleges of Medicine, written by command of King Philip VI (1328-50). The elaborate classification of this work into divisions and subdivisions recalls the Arabian writers. It may be thus summarized:—

Summa I: Causes.

- Cap. i: Primary causes.
- Cap. ii: Secondary causes.
- Cap. iii: Prognostics and signs attached to each.

Summa II: Preservation and Cure.

Tract 1: Prophylaxis "per dietam" (i.e., by regimen).

- Cap. i: Rectification of the air.
- Cap. ii: Exercise and baths.
- Cap. iii: Food and drink.
- Cap. iv: Sleep, vigil; inanition and repletion; accidents of the mind.

Tract 2: Treatment "per medicinalia" (i.e., by doctor's remedies).

- Cap. i: Universal remedies. (Chiefly phlebotomy. When there are apostemata the rules for the blood-letter correspond pretty much to those in the treatises already examined.)
- Cap. ii: Particular and appropriate remedies.
- Cap. iii: Antidotes.

(Both Caps. ii and iii deal with drugs and diet.)

¹ In the Cambridge University Library there is an MS. volume of the late fifteenth century in which "The Gouernayle," here called "Liber de Bon Gouernance," is immediately preceded by the epistle "Dilectissime Frater" (Cambridge University Library, MS., L, 1, I, 18 (I) and (II)).

² Sloane, 2,507, fo. 10 recto to fo. 11 verso. The "Thesaurus Pauperum" occupies fo. 7 recto to fo. 20 verso.

The regimen prescribed is not unlike that of John of Burgundy, but phlebotomy is subordinated to *disinfection*. The plague is attributed to astrological influences dating back to the year 1345.

The British Museum version of this treatise¹ is probably an exact copy of the work. It bears the date 1373, and purports to have been sent in that year "from the flourishing school of Paris" to Milan during an outbreak of the plague.

(VII) THE TREATISE OF JOHANNES JACOBUS, ABOUT 1364.

Somewhat similar in outlook, but less verbose than the work of John of Burgundy is that of his contemporary Johannes Jacobus, Royal and Papal Physician, Chancellor of Montpellier and friend of Guy de Chauliac. This treatise opens with a dedication to authority human and divine, and consists of three chapters dealing respectively with the cause of the pestilence, the regimen against it, and treatment for it.²

The causes of the pestilence are divided into three categories—those from beneath, those from above, and a combination of the two.

The terrestrial causes may be of a special nature [*particulares*] such as bad sanitation in the house. This constantly gives rise to pestilential fever, "and many physicians are deceived; and not recognising the disease, they are ill able to cure it." Or a universal plague may result from a widespread [*generalis*] terrestrial cause, as from corpses after war or from foul standing water. This has happened in his own time in Sardinia and other "corrupted" regions. But sometimes the pestilence will come from the air on high. We may detect nothing unusual, but the "celestial humors and spirits" are corrupted. Sometimes those who live in a usually healthy atmosphere will suffer more from this

¹ The British Museum copy occupies Harleian, 3,050 (XVII), fo. 66 recto (b) to fo. 68 verso (b). Unfortunately, the *explicit* is partly blurred. L. A. J. Michon, "Documents inédits sur la grande Peste de 1348, thèse pour le Doctorat en Médecine," Par., 1860, prints an imperfect seventeenth century version from Paris, Bibliothèque Nationale, Anc. fonds Latin, 7,026, which, he says, is based on two earlier versions; one in the Fonds St. Victor and one in the library of Dr. Moreau. From the seventeenth century version we obtain the date 1348, which also corresponds to the reign of King Philip. The MS. from the St. Victor Library is now 7,082 in the Bibliothèque Nationale. J. F. C. Hecker has collated it with MS. 7,026, so as to restore the complete text, which he publishes in *Wiss. Annal. der Gesammten Heilkunde*, Leipz., 1834, xxix, p. 219.

² Besides the plague treatise, Johannes Jacobus wrote a "Thesaurum Medicinae" and a work on the stone. See P. Pansier, "Les maîtres de la faculté de médecine de Montpellier au moyen-âge," *Janus*, 1904, p. 600; and E. Wickersheimer, "Johannes Jacobis Steintraktat (Ende des 14 Jahrhunderts)," in *Archiv f. Gesch. d. Med.*, Leipz., 1910, iii, p. 41.

pestilence than those who habitually live in bad air, such as prisoners, or inhabitants of places close to stagnant waters. As has been remarked by Isaac in his work "De Retardanda Senectute," a plague among animals will not pass to human beings, nor will the reverse occur. Thus we may see men dying while animals are immune, or the mortality may be among cattle and other animals, and sometimes among birds or among swine. But the best prophylactic against the plague is to flee, and far must be our flight.

The disease may manifest itself either as a fever or an apostume, or either symptom may be followed by the other. Should there be an apostume it will appear at the emunctories of the three principal members, for the venomous matter attacks them chiefly. Nevertheless, Nature may be in many ways disturbed and yet the lesion not be apparent. Uroscopy will be of no help, and many physicians fail to observe when the patient is drifting deathward, but still continue their chatter about turning the qualities towards the marrow.

Johannes Jacobus now turns to the signs of the disease, but in spite of his severe remarks on diagnosis under the heading "Causes," he merely observes that the signs may be deduced from the causes of the disease and also from the signs of other fevers. "Therefore I will not trouble to blacken paper on this subject."

Two questions are now considered. First, why are only some people attacked by the scourge while others escape? The answer is: Some people are exposed more directly to the evil influence and others present a greater predisposition on account of their humoral complexion, or because their pores are open; such are especially those misguided wretches who are too prone to yield to the temptation either of baths or of wrath.¹

The second question is: "Are these pestilential diseases infectious? This is answered in the affirmative, for "these bodies emit poisonous exhalations that corrupt the air." Thus the conception of infected vapours and infected humors inevitably developed into the idea of infection from one individual to another.

It is characteristic of all this literature that there is seldom any question of public measures against the plague—the whole attention of the writer is fixed on the individual avoidance of the disease. So in the present treatise we are advised to flee from those infected by the plague and to avoid crowds. The physician and the "assistant to the seke"

¹ Cf. Constantine Africanus, "De Communibus Medico Cognitu locis necessariis," v, p. 1, ed. Basel, 1546, and De Renzi, loc. cit., ii, pp. 17, 124; iv, p. 587.

are both warned to stand far from the patient, facing door or window.¹ Also the air in the patient's room should be frequently changed, the north and east windows being opened, but those to the south kept fast shut.

In the second chapter of his treatise Johannes Jacobus advises the careful choice of a house, where there is a suitable middle floor. The lower chamber must not be used, since it is subject to rheums; but should this not be the case, it would be even better than the middle floor. But the upper chamber must in no case be inhabited, as it is subject to celestial influences. In stormy or misty weather we should stay at home. Our author deprecates visits to the town in time of pestilence, advising rather that we should busy ourselves within doors away from crowds. The house is to be sprinkled with rose-water, vinegar and other decoctions, and this is especially important in summer. In all seasons we are advised frequently to wash hands and face in rose-water and vinegar, and to smell this fragrant mixture. But our author expresses his distrust of the custom of carrying a "pomum ambre" in the hand, unless it be mixed with camphor and sandal, as otherwise it will attract corrupt air to the heart.² Johannes Jacobus also advocates fires, since they greatly impede the passage of evil emanations from above, and they "purify the air even as a lodestone [*lapis magnes*] if painted with garlic will no longer attract iron."³ This idea that garlic is antagonistic to the action of the magnet is an ancient sailors' superstition. It was refuted by Giambattista Porta in the sixteenth century, and scorn was poured upon it by the great investigator William Gilbert.⁴

The *personal régimen* of Jean Jacques is much like that of John of Burgundy. A similar dietary is provided and gentle exercise advised "in some place where neither the sun nor the rays of the moon penetrate." Sleep in the day-time is deprecated, and in all circumstances we should sleep only at a long interval after meals, with the head raised, girdle and shoes removed, and with every precaution against cold. Baths must, of course, be avoided except in *extremitatibus*, and on no account must we experience either wrath or too great joy. Phlebotomy is recommended once a month, unless contra-indicated, as

¹ This passage is omitted in Sloane, 404 (III), see note 5, p. 184.

² In Sloane, 3,124 (XVI), on the other hand, this custom is recommended.

³ This simile is omitted in 3,124 (XVI).

⁴ The superstition of the effect of garlic on the magnet is discussed by the late Professor Sylvanus P. Thompson in his "Notes on the 'De Magnete' of Dr. William Gilbert," London, 1901, pp. 4 and 5.

by age, pregnancy, great weakness or flux. It should be performed on the basilic unless there be local [*in parte*] pain, in which case the rules given below will be followed. The preservative regimen concludes with some recipes.

The third section of the tractate of Johannes Jacobus concerns *treatment*. In cases where there is fever without abscess formation, the action of the bowels must be promoted by suppository and clyster. This may be followed by mild phlebotomy, but the patient's strength must not be exhausted. Diet should be as in acute fever, and the heart should be well supported by a cordial electuary. Should the fever be accompanied by apostemata, phlebotomy should be performed. The rules, based on the pathology of the three principal members and their emunctories, are carefully set forth. The instructions depend on the development at the various sites of "dolor vel apostema." Johannes Jacobus expresses his agreement with Arnald de Villanova that *theriaca* (*theriac*) should not be laid on the apostemata, as it drives the poison inward. The physician should always seek to "comfort" the heart, but if an apostume form in that most vital organ, *theriac* must then be given. This therapeutic marvel, *theriaca*, inherited from classical antiquity, was thus reserved for extreme peril. The cautery is deprecated by Johannes Jacobus on account of the pain involved, but recipes are given for plasters. The treatment of a broken apostume, he adds, should be entrusted to a surgeon. In conclusion, he exhorts the reader: "If I have said ought ill, let it be suppressed with gentleness and if ought good let it be received with joy."¹

There are in the British Museum three MSS. of this treatise of Johannes Jacobus. All are in Latin.² There is a well-known story of Guy de Chauliac that in spite of all entreaties he refused to leave Montpellier during the terrible plague outbreaks of 1348 and 1360. The tale is appended to one of the Museum copies of the tract of Johannes Jacobus.³

¹ "Et si aliqua dicta sunt minus bene cum humilitate reprimantur et bene dicta cum gaudio recipiantur," in British Museum Additional, 4,897 (I), not in the other two British Museum MSS.

² Additional, 4,897 (I), fo. 1 recto to fo. 8 verso. Sloane, 3,124 (XIV), fo. 61 recto to fo. 66 recto (imperfect); Sloane, 3,124 (XVI), fo. 66 verso to fo. 70 recto (imperfect). Sloane, 3,124 (XVI), follows Jacobus fairly closely, though some of the recipes are different. The work was apparently pirated, but the name in which it appeared has been obliterated by the copyist, who perhaps gradually recognized the treatise that he had already written out on fo. 61 recto to fo. 66 recto. The word "foligno" may just be deciphered in the erased portion. The same volume contains the treatise of John of Burgundy, pirated by the Bolognese doctors. The whole volume was probably written in Italy.

³ Additional, 4,897 (II), fo. 9 recto to fo. 10 recto.

(VIII) THE TREATISE OF BENGT KNUTSSON, MIDDLE OF THE FIFTEENTH CENTURY.

A hundred years after Johannes Jacobus, his treatise was adopted wholesale by Bengt Knutsson, Bishop of Västörås, near Stockholm. Bengt lived in stormy times. From his designation in this treatise as Bishop "Arrhusiensis in the kingdom of *Dacia*," we may gather that his own leanings were to the *Danish* dynasty rather than to the rival Swedish claimant to his country's throne. He did not receive his bishopric until 1461, the year before his death, and we may imagine that he supported himself by medicine when ecclesiastical preferment through royal patronage seemed unattainable.

Bengt introduces into the treatise further meteorological lore, but on the other hand he develops yet further the practice of disinfection. He arranges the work carefully in five chapters, dealing respectively with the tokens, the causes and the remedies for pestilence, the comforts for the heart and principal members, and the rules and seasons for blood-letting. The "seven tokens" of pestilence are all meteorological, save the third, a plague of flies. The fifth token is a blazing star, and this portends not only pestilence but also great slaughter in battle. In the third chapter our Bishop appropriately enjoins repentance, the prime remedy, "as says Jereme the prophete," but though this is the best measure of all he proceeds to detail various methods of disinfection. He holds emphatic views on sanitation, and he assures us "yt ys holsume that the housse be keppet cleen." He gives a special warning against the influence of the south wind.¹ Further we are exhorted to "Beware of any multitude of people leste that be the breth off summe of them may be enfecte," and "Let them beware of bathes for allytyl ferment do corrupte halle the body."²

Bengt tells us that "In the mounte Pessulano (Montpellier) y coude not avoyde the communate, for y went frome place to place be cause of my pouerte; wher y toke a sponge or ellys brede put in vinegre and bared wt me, putting to my nose and to my mouth³; for why, halle maner of shyarpe lycours as vinegre and suche others they stoppe the

¹ Sloane, 404, fo. 286 verso. The fear of the south wind is referred by Bengt to Hipp., Aph. III, where it may be found in the fifth chapter.

² Sloane, 404 (III), fo. 287. In other versions "a little ferment" becomes "a little thing."

³ Cf. Rhazes, "Liber Divisionum," cap. 158, and "De Aegritudinum Curatione," De Renzi, loc. cit., ii, 87.

weys of the humors and cause that venemouse thynges shalle not entre. And be this maner meanys y schaped from pestilence where myne done falloshye hadde no bellew but y shulde dye. And halle thys remedies y proued be myselff."¹

Our bishop concludes his chapter on "Comforts of the Heart and pryncipall Members" with the invaluable advice: "To be mery in the herte is a great remedie for helth of the body. Caste halle . . . fantasyes and eat and drink mesurably. Therefor in time of this grete infirmite beware ye fear not deth. But lyve merily and hope to lyve long."

The rules as to treatment by phlebotomy are more elaborate than in the treatise of Johannes Jacobus. They are preceded by some pretty advice as to regimen. The desire for sleep after meat must in time of pestilence be sternly repressed.² Rather we should go out and walk first in the gardens or fields. The onset of the plague may be recognized by loss of appetite, desire for sleep after dinner, "grete hete under cold," and pain in the head. But all may be "putte away" by moving of a space hither and thither. "To ride or to walk he may not for sleuthe of the body and the wryght of the same." If, however, these symptoms are not recognized, the botches will appear by midday³ and bleeding should be prolonged until the patient swoons.⁴ The site for this drastic proceeding is based on the pathology of the three members, as with Johannes Jacobus.

There are in the Museum two Latin and three English versions of Bengt's treatise.⁵ It became very popular, and it was several times printed both in Latin⁶ and in English versions. Two English editions are ascribed to Machlin, London, 1480, and each is represented by only one copy, respectively in the British Museum and in the John Rylands

¹ Sloane, 404, fo. 287 verso. Sudhoff has found this passage, as well as the chapter on "Tokens," in a MS. bearing the name of Johannes Jacobus; cf. Sudhoff, loc. cit., v, p. 56.

² De Renzi, loc. cit., iv, p. 587; v, p. 1.

³ Sloane, 404, has "half a day."

⁴ Sloane, 404, inserts a merciful "almost."

⁵ Latin: Additional, 30,935 (XVIII), fo. 326 recto to fo. 329 recto, and Egerton 2,622 (VI), fo. 74 recto to fo. 80 recto. English: Sloane, 404 (III), fo. 282 recto to fo. 293 verso; Sloane, 1,589, fo. 275 verso to fo. 280 verso (where it precedes the English tract in four chapters by John of Bordeaux in a "Praxis Medica"), and Sloane, 2,276 (II), fo. 191 recto to fo. 199 recto.

⁶ Two Latin editions are both ascribed by the British Museum Catalogue to G. Leeu, Antwerp, 1485, and a third to Arnaldus de Colonia, Leipzig, 1495 (all with queries).

Library at Manchester. The Rylands copy has recently been reproduced in facsimile.¹

(IX) SOME ANONYMOUS TRACTATES OF THE FOURTEENTH CENTURY.

(1) A short anonymous tract² dating from the fourteenth century gives much the same views as those of Johannes Jacobus regarding the causes of pestilence. Meteorological portents are added to the list of "causes," and these perhaps suggested the excursions in Bengt's treatise in the succeeding century. Symptoms are here also described and are referred to humoral action. The tract ends with the remark that after the signs of pestilence follows the cure, and passes immediately to the complete treatise of John of Burgundy.

(2) A small tractate of the fourteenth century³ contains a discussion as to the nature of contagious diseases. They are defined as "diseases which are wont to invade the healthy by mere contact or conversation or such trivial cause." Chief among these diseases are the various fevers. The cause lies in corrupted air if infection is conveyed by the breath. Among the contagious diseases are ophthalmia [*lippitudo*], "lepra," all forms of pleurisy, and often phthisis, peticia (typhus?), "scabies" (often conveyed by the sweat), and erysipelas. The evil is best avoided by shunning those who are infected, including even friends and wards [*custos*], by taking good wine and "panis piperatus," by electuaries, and by pure sweet smells. The doctor who has felt the pulse of a patient suffering from these diseases should immediately immerse his hands in vinegar and water, and beware lest the noxious fumes enter with sweat through his open pores.

¹ Guthrie Vine, "A Litol Boke . . . for . . . the . . . Pestilence." John Rylands Facsimile 3, Manchester, 1911. Besides the two Machlin editions of 1480, another English edition is attributed to the same publisher about the year 1488, and survives only in a single sheet in the Cambridge University Library. The same library has also an English edition published by Wynkyn de Worde about 1510, and a fragment which appears to represent a reprint of Machlin's 1488 edition by Jan van Doesbosch, Antwerp, early in the sixteenth century.

² British Museum, Royal 12, G. IV (VII), fo. 157 verso to fo. 158 recto.

³ Sloane, 568 (XXIII), fo. 217 verso to fo. 218 recto.

(X) THE "MISSUM IMPERATORI," 1371.

There is in the British Museum a MS. in a fifteenth century hand containing a copy of a short tract¹ compiled in Bohemia in the fourteenth century in time of pestilence. Copies of this little work abound in Central Europe, where it is often described as "*missum domino imperatori*," and usually bears the date 1371.²

The British Museum Latin MS. version follows immediately after a copy of Bengt's treatise in a volume which once belonged to a Carthusian monastery at Erfurt. The tract is arranged in eight short paragraphs, which are numbered in many copies. It is devoted entirely to prophylactic measures, and makes no mention of astrology. Emphasis is laid on phlebotomy, and most of the points raised by Johannes Jacobus of Montpellier receive brief notice. We meet again the wise counsel of the author of the epistle "Dilectissime Frater," that in time of pestilence we do keep a cheery countenance. The seventh paragraph runs as follows: "Item: If you are told about the plague, consider the matter unheard."

A German version of this little tract written in the fifteenth century appears in Arundel 164, and this time is described as sent "by our father the pope to Kayser Karl in the year 1371." It is a little longer than the Latin version, but does not include the useful item above quoted.³ Similar to this German version is the Dutch letter "sent by the chief physician of the supreme kayser to the lady van Pleu."⁴

¹ Additional, 30,935 (XIX), fo. 329 recto to 331 verso. Charles IV was crowned Emperor in 1355, and occupied the Imperial throne until his death in 1378.

² See Sudhoff, loc. cit., iii, p. 149, and iv, pp. 191, 195, 389, &c.

³ Arundel, 163 (VII), fo. 115 recto and verso. Printed by Sudhoff, loc. cit., iv, p. 199. Gregory VI was Pope from 1370 to 1378. His predecessor, Urban V (1367-70), was strongly supported by the Emperor, Charles IV.

⁴ Additional, 4,897 (IV), fo. 13 recto to fo. 14 verso. This little MS. is printed by Sudhoff in "Studien zur Geschichte der Medizin," H. 8, pp. 192-199, and is further discussed by him in the *Archiv*, loc. cit., iv, p. 203.

(XI) THE TRACTATE OF PIETRO DE TOSSIGNANO, 1398.

We next consider Pietro de Tossignano's plague tractate, written in 1398.¹ Pietro studied medicine and surgery in Padua, and in 1377 he bought lands and settled at Bologna near his native Tossignano' Castillo, by Imola. In 1386, the Council of 400 bestowed the citizenship of Bologna on Pietro and his descendants, and allocated to him a considerable salary as "Prelector" of Medicine on condition of his promise to devote the remainder of his life to the University. Pietro accepted the condition, but soon after succumbed to an invitation from Francesco Di Carrara, who offered him large sums to "read" medicine in Padua. So in 1390 the irate Council of Bologna not only deprived Pietro and his children of their civic rights, but confiscated all their property in the city. By 1396 Pietro was anxious to return to Bologna. Powerful friends interceded for him with the gonfaloniere, and he was received back and his honours and possessions restored. He probably lived to enjoy his position for another seven years.

Tossignano's plague tract is divided into four chapters, of which the first deals with causes of the disease, the second sets forth a detailed preventive regimen, the third enunciates and replies to eleven queries or difficulties, while the fourth provides a curative regimen. His explanation of the causes of the plague is on much the same lines as those of John of Burgundy and of Johannes Jacobus, but he has a more definite notion of contagion. Among the causes of the disease he mentions "contact,"² while in the second chapter, after describing the signs of pestilential air, he advises instant departure from localities where such signs are seen, explaining that it is safer to move to a region where there has never been an epidemic than where pestilence has reigned even six months back, since the "reliquiae"³ will remain

¹ The British Museum MS. of this work, Additional, 30,050 (II), dates from the fifteenth century. In it Tossignano's tract has become divided, and occupies fo. 110 recto to fo. 115 verso, and fo. 85 verso to fo. 91 verso of the volume. Tossignano's "De Peste" was printed in Ketham's "Fasciculus Medicini," Venice, 1493, and numerous later editions. In these volumes it is preceded by an interesting picture of a plague patient receiving physician and attendants. The physician is feeling the pulse, and some of the disinfectant measures recommended in these pest tractates may here be observed in application. Among the best known of Tossignano's other works are: "De Medicamentis Formulis," Venice, 1518; "De Balneis," Venice, 1533, and Leyden, 1587; "Regimen Sanitatis," Paris; "Tabula in Probl. Arist.," Paris; "Recipes in 9 Almansor," Venice, 1517.

² Fo. 110 verso to fo. 111 recto.

³ Cf. John of Burgundy's "vestigia," which, however, appear to be regarded more definitely as astrological phenomena.